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ABSTRACT

A STUDY OF THE RELATIONSHIP BETWEEN CERTAIN TEST SCORES AND PROBABLE TRAINING AND VOCATIONAL SUCCESS WAS MADE. EXAMINED WERE THREE MAJOR TRAINING AREAS: POWER SEWING MACHINE, NURSE AIDE, AND CLERICAL OFFICE WORK. SIX TESTS WERE TESTED FOR THEIR ABILITY TO PREDICT SUCCESS: THE WAIS REVISED BETA; PURDUE PEGBOARD; ENGLISH, CALIFORNIA SURVEYS OF READING, ARITHMETIC, AND SPELLING; THE GATB; AND THE WONDERLIC PERSONNEL TEST. TWO SEPARATE CRITERIA FOR SUCCESS WERE ESTABLISHED, AGAINST WHICH THESE TESTS WERE CHECKED FOR PREDICTIVE ABILITY: SUCCESS IN TRAINING, AND THE ABILITY TO REMAIN EMPLOYED AFTER SIX MONTHS. NO CLEAR PATTERNS EMERGED ON THE EXPECTANCY TABLES. ON THE TEACHER RATED GROUP, MOST OF THE RESULTS WERE INCONCLUSIVE. A CLEAR CUTOFF POINT WAS SEEN ON THE WAIS VERBAL IQ AT THE DULL-NORMAL RANGE (WECHSLER CLASSIFICATION SYSTEM). THIS WAS NOT SEEN ON THE PERFORMANCE IQ TABLE WHERE THERE SEEMED TO BE NO PATTERN. READING ACHIEVEMENT SEEMED TO FALL ABOVE THE SEVENTH GRADE LEVEL ALTHOUGH LOW READING ACHIEVEMENT SEEMED TO HAVE LITTLE TO DO WITH TEACHER RATINGS. IN THE NURSE AIDE GROUP PLACEMENT FAILURES WERE UNCOMMON. (AUTHOR/NL)

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THE USE OF PSYCHOLOGICAL TESTS IN PREDICTING VOCATIONAL SUCCESS OF DISADVANTAGED ADULTS

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INTRODUCTION

The St. Louis Evaluation and Training Center is a Federally funded agency operated by the Jewish Employment and Vocational Service of St. Louis, Missouri. The function of the center is to accept clients who have been referred by other agencies. Prior to such referrals, the clients are certified as meeting Office of Economic Opportunity criteria as poverty level 'hard-core' unemployed. Briefly, this means that the individual has less than poverty index income, or is unemployed and unable to find work because of lack of salable work skills, socially unacceptable behavior patterns, or other educational or cultural deficiencies.

Upon arrival at the Center, the clients are sent to the Counseling and Testing Department. There, he is tested in an evaluation procedure which lasts from two to four days. During this time, he also sees a vocational counselor several times. After the evaluation is completed, the counselor assigned to the client makes a recommendation for the client to either enter a training program at the Center, or to be referred to some other more appropriate agency. The referral is based upon the subject's test results, his specific interests and goals, and whether there are vacancies in the various training areas. As one would suspect, 'clinical intuition' plays a major role in the referral process.

If the referral is to a training program within the

Center itself, the client is brought into the program at the earliest vacancy. After from six to sixteen weeks, depending upon the course, the client is 'graduated'. At this time, the Placement Department attempts to locate a job acceptable to the client. Upon successful placement, the client is followed up after six months to learn if he has been successful in his work. If at any time the placement officer learns of a placement failure, he will attempt immediate re-placement.

CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

Some question has arisen at the St. Louis Evaluation and Training Center about the relative value of the various tests given the clients. Some of the vocational counseling staff has been of the opinion that cutting scores should be firmly adhered to when setting criteria for entrance into the various training programs. Other counselors have taken a contrary stand, saying that tests are relatively unimportant and should be secondary to clinical intuition. This paper will present some experimental data in an attempt to show the frequency of certain test scores as predictors of future 'success' in training and at work. This evidence is not presented in an attempt to prove or disprove the argument of either of the cited viewpoints.

I. THE PROBLEM

Statement of the problem. It was the purpose of this study (1) to compare the test scores, on various tests, of certain individuals with the rating of their instructors in pre-vocational training courses; (2) to compare the test scores, on various tests, with the individual's ability to find and keep a job related to the area for which they were trained at the Center.

II. DEFINITIONS OF TERMS USED

Training. Three training areas were used in this study. They are: (1) Nurse Aide Training, (2) Clerical Training, and (3) Power Sewing Machine Operation.

Nurse aide training is a twelve week course at the Center. The instructor is a registered nurse, a graduate of Jewish Hospital of St. Louis. The total course takes twelve weeks. The first eight weeks are spent at the Center, the trainees learning to take temperatures, blood pressure, make beds, give baths, and perform the other basic functions of the hospital attendant. The final four weeks are spent at DePaul Hospital of St. Louis, giving the trainees clinical experience. During this phase of the training, the students actually help the regular hospital staff care for patients.

Clerical training is a sixteen week course at the Center. Time for completion of the course is not required to be held to the specific length of time specified, but is based on the average length of time for the average trainee to be able to pass the Federal Civil Service Test for clerk-typists. The trainee is given intensive typing training, as well as instruction in the operation of duplicating machines, english usage, office procedures, and special assistance with any other area of weakness.

Power sewing machine operation is an approximatley

eight week course. Like the other courses, it too is held at the Center. The trainee is presented first with a high speed single needle sewing machine such as used by the garment industry. After learning the basic seams, the trainee is advanced to double needle, furring, and other more sophisticated equipment. Degree of such advancement depends upon the ability of the individual student, as determined by the instructor.

The tests used. A total of six tests are used in this study. These six tests yield a total of thirteen separate scores or indices of measurement.

The Wechsler Adult Intelligence Scale (WAIS) is an individually administered intelligence test. The test is made up of eleven subtests, five of which are performance, or non-verbal; the remaining six are designed to measure various verbal abilities. Thus, the WAIS yields a Verbal IQ, Performance IQ, and a Full Scale IQ.

The Revised Beta is a non-verbal IQ test originally developed to test illiterates by the Army. There are six subtests, several of which are similar to those used on the non-verbal portion of the WAIS. The first civilian version of the Beta was copyrighted in 1931.

The Wonderlic Personnel Test is an instrument used by many industries and offices to screen applicants. There are

fifty questions to be answered in a twelve minute time limit. Scores are not converted, but simply reported in raw score form. The manual gives information about cutoff scores for various occupations, ranging from janitor to engineer.

The Purdue Pegboard is a test of manipulative dexterity. Individual trials are given for the right, left, and both hands, which are totaled for an index of gross digital dexterity. Fingertip, or fine dexterity is measured by the number of assemblies the individual can make utilizing very tiny parts.

The United States Employment Service (USES) General Aptitude Test Battery (GATB) is a multipart aptitude test, designed to measure the ability of an individual to perform specific jobs. There are at present thirty-six Occupational Aptitude Patterns (OAPs). These are empirically derived patterns of cutoff scores for various occupations. For instance, pattern number thirty-six is the pattern for courtroom stenographers. Two-thirds of all courtroom stenographers made OAP thirty-six, so if a subject makes this OAP, the manual says he will have an excellent potential for becoming a courtroom stenographer if this is his vocational goal.

The California Surveys of Achievement are a battery of four academic achievement tests. They are: Reading, Arithmetic, Language (grammar), and Spelling. The test used at the

Center is the Junior High Level, Form 1, for use with grades seven, eight, and nine.

CHAPTER II

THE GROUPS STUDIED

The groups which constitute the subject of this investigation are representative of the clientele of the Center. All of the subjects were female. The mean age of the two groups was twenty-four, with a range from eighteen to forty-four. All the subjects had family incomes less than three thousand dollars per annum. The racial balance of the groups was eighty-five per cent Negro, and fifteen per cent white. Maritial status could be roughly equally divided between single, married, and formerly married. Only one of the trainees claimed to have a police record (for peace disturbance), but no effort was made to investigate the veracity of those who claimed to have no record. None of the trainees were reported as having a vocationally limiting physical handicap. Slightly less than one fourth of the individuals investigated claimed to have completed high school.

CHAPTER III

RESULTS OF THE STUDY

To report on the problem of prediction from test results, the basic method, and the one which seems to be the most widely used, is the expectancy table. For our purposes, the multiple entry expectancy table described by Wesman (1966) seemed to be the most appropriate.

The first of the groups studied are those who were rated by their training instructor as to relevant job skills. The second group consisted of a group of former trainees actually placed on jobs. Somewhat different approaches were made with the two groups. The first groups several test scores were compared directly with the instructor's ratings. For the second group, the subjects' performance in the world of work was compared with their test scores also, but in this case the test scores were compared with each other in an effort to see if there was a relationship, however crude, within the tests themselves.

I. THE INSTRUCTOR RATED GROUP

Technique. The training instructors were handed a five by eight inch card and told: "Rate each student in the training class according to his actual skill. Absenteeism, personality differences, or other bad habits are to be disregarded." The cards were printed on one side, and the instructor was told to

disregard the markings on the reverse side where the test scores were to be recorded. In order to reduce the chance of influencing the ratings, the actual test scores were not recorded until after the ratings were collected from the instructors. An illustration of the survey card may be seen in Figure I.

When the expectancy tables were prepared, it was found that only from the Clerical training class were there enough scores to be useable. Because of a technical problem with the files of the students, over half the files of the active students were unavailable. As a result, the Sewing and Nurse Aide students could not be meaningfully studied.

Results. Although most employers using the Wonderlic Personnel Test use a minimum cutting score of twenty (20) for screening clerk-typist applicants, the two highest rated trainees fell into the 10-12 score group. The three students rated at the "acceptable" level were in the 15-19 group, while the single highest score student rated "fair" on the instructors report. No score of any clerical trainee in the sample fell below ten.

On the Purdue Pegboard Test of Manipulative Dexterity, the only two students rated with an above average rating scored at one standard deviation above and below the mean, respectively. The single lowest rated student made a gross dexterity score above the mean. Those trainees rated as "acceptable" and "fair" were fairly evenly distributed near the mean. On the fine

fingertip dexterity portion of the Purdue, the two highest rated individuals fell within one standard deviation from the mean, the ones rated "acceptable" were from one to two standard deviations above the mean while none were below the mean. Those rated below average ranged from one standard deviation below the mean to one above. The single lowest rated person was in the thirty-fifth percentile.

The WAIS scores indicate a sharper delineation of cut-off scores on the Verbal IQ than on the Performance IQ. Most of the scores fell in the dull-normal range (Wechsler classification system), including the two highest scores. Both these individuals scored lower on the Performance test than on the Verbal. This phenomenon extended to all but two of the cases studied. The Revised Beta IQ scores very closely paralleled the WAIS Performance scores, while the WAIS Full Scale IQ tended toward the difference between the WAIS Verbal and Performance scores.

The reading achievement of the trainees fell almost completely above the seventh grade level. Interestingly enough, the single score at the sixth grade level was one of the two highest rated persons. Most of the trainees were reading above the tenth grade level. Arithmetic achievement was much more scattered and showed no particular pattern. The lowest scores were at the fifth grade level, and the highest at the ninth. All of the below average rated students scored from the sixth to the eighth grade levels. The Language usage test resembles the

Arithmetic test in that the scores are scattered and there is little discernable pattern. The highest scores on this instrument are those of the average and below students, while the two best students are among the lowest scores. The lowest rated and the highest rated students made identical Language scores. The Spelling test shows the two highest rated students scoring no lower than the ninth grade level, the average students, with one exception at the tenth grade level, and the below average students at the ninth grade or below.

An interesting pattern appears when the number of OAPs made on the GATB were counted. None of the students made from six to ten OAPs, while half made eleven or more and half made from one to five. None of the trainees made no OAPs. More than half of those making more than eleven patterns were rated below average, while the two best students made five or fewer patterns.

The OAPs which categorize office and clerical workers are: 9; 13; 23; 36. If any of the students made any one or more of these patterns, they were entered in the row marked "Pattern". If none of these specific OAPs were made, they were placed in the row marked "No Pattern". Approximately two thirds of the clerical trainees made no specific pattern for the work they were learning to do. Both the top rated students were in the "No Pattern" group, as was the lowest rated.

STUDENT _____ INSTRUCTOR _____

This is a confidential questionnaire concerning the general ability of individual students to do the work required in the training area. The results of this survey will not be entered on the student's record or shown to them.

Please circle the number of the statement that best describes this student in terms of his ability to learn the subject matter of the training area:

1. OUTSTANDING--has no weaknesses, a perfect student.

2. EXCELLENT--few weaknesses, learns quickly and easily.

3. GOOD--work is satisfactory and above average on most work skills.

4. ACCEPTABLE--does reasonably well, no better or worst than most.

5. FAIR--below average on most work skills, work not entirely satisfactory.

6. POOR--very limited ability with many shortcomings.

7. FAILURE--totally unsatisfactory work, will never be able to learn the subject.

FIGURE I

CLIENT RATING QUESTIONNAIRE

TABLE I

WONDERLIC							
score	rating						
	1	2	3	4	5	6	7
20<					1		
15-19				3	1		
13-14					1	1	
10-12					1		
8-9			2		1		
0-7							

PURDUE GROSS							
score	rating						
	1	2	3	4	5	6	7
98-99							
84-87			1				
50-83				2	2	1	
16-49				1	2		
3-15			1				
1-2							

PURDUE FINE							
score	rating						
	1	2	3	4	5	6	7
98-99							
84-87				1	1		
50-83			1	2	1		
16-49			1		2	1	
3-15							
1-2							

WAIS VERBAL							
score	rating						
	1	2	3	4	5	6	7
110-120					1		
100-109				1		1	
90-99			2	2	3		
80-89							

WAIS PERFORMANCE							
score	rating						
	1	2	3	4	5	6	7
110-120							
100-109				1	1		
90-99			1	2	1	1	
80-89			1		2		

WAIS FULL SCALE							
score	rating						
	1	2	3	4	5	6	7
110-120					1		
100-109				1			
90-99			2	2	2	1	
80-89					1		

REVISED BETA							
score	rating						
	1	2	3	4	5	6	7
110-120							
100-109			1	2	1		
90-99			1	1	2	1	
80-89					1		

GATB							
# OAPs	rating						
	1	2	3	4	5	6	7
11<				2	3		
6-10			2	1	1	1	
1-5							
0							

GATB							
specific OAP	rating						
	1	2	3	4	5	6	7
Pattern				2	1		
No Pattern			2	1	3	1	

EXPECTANCY TABLES COMPARING VARIOUS TEST SCORES WITH INSTRUCTOR RATINGS

Note: All numerical totals do not add to the same because not all trainees received all of the tests.

TABLE I
(CONTINUED)

READING

score	rating						
	1	2	3	4	5	6	7
10<			1	2	2		
9							
8				1			
7					2	1	
6			1				
5							
0-4							

ARITHMETIC

score	rating						
	1	2	3	4	5	6	7
10<							
9				1			
8					2		
7			1	1	1		
6					1	1	
5			1	1			
0-4							

LANGUAGE

score	rating						
	1	2	3	4	5	6	7
10<					1		
9				1			
8				1	1		
7			1	1	2		
6							
5			1			1	
0-4							

SPELLING

score	rating						
	1	2	3	4	5	6	7
10<			1	2			
9			1		1		
8					1		
7				1	1		
6					1	1	
5							
0-4							

II. THE JOB PLACED GROUP

Technique. The criteria used for "success" in this group was whether the client could be employed or remain employed after hiring. Only those who were still employed in jobs directly related to their training were used. Also, persons who were employed in their area of training, but were transferred, promoted, or otherwise no longer working within the area of their competency were not used. Our interest was directed only toward those who were trained and subsequently attempted employment in the same field of work.

At the time this study was made, only those files in the Center's Placement Department were available. Of these available files, only the files which were current for the months of July and August 1968 provided follow-up information. This six-month follow-up consisted of personal contact with the former trainee to learn if he/she had successfully completed six months of work for the same employer.

Each placed trainee's file was checked to record the test scores made when the client was initially evaluated. This portion of the study was identical with the previously cited Instructor Rated Group. The test scores were paired for comparison purposes in dyads which had customarily been used by the Center's vocational counselors for evaluative purposes. So that the success/non-success data could be directly compared

with the two tests in each dyad, and with each other, the double entry expectancy table described by Wesman (1966) was used.

Results. Most of the clients in this group were first evaluated at the Center prior to the adoption of the Wonderlic Personnel Test. For this reason, the Wonderlic was omitted from the expectancy tables.

With the Clerical trainees, both the greatest success on the WAIS Verbal and Performance scales came at the lower half of the Normal range (Wechsler, 1955, p. 20), as well as the greatest numbers of failures. Proportionally, a greater number of failures occured in the Bright-Normal range than did successes on the Performance scale; wheras, a greater number succeeded in the dull-normal range than failed. The same phenomenon occurs on the WAIS Verbal scale. The failures are equally divided entirely within the normal range above and below the mean of the test, while more successes occur in the low-to-dull-normal range than above the mean.

Little can be determined from the WAIS Verbal/Performance comparison in the Nurse Aide group because despite diligent search, only one placement failure was located. On both the Verbal and Performance scales, the greatest concentration of scores occur in the dull-normal range. It is in this range that the single failure also occurs.

Again, with the WAIS Verbal/Performance comparison of successes versus failures in the sewing group, we find a more or less normal distribution of scores in both the success group and failure group. In the Verbal range, we find the greatest failure concentration to success ratio in the borderline IQ range (Wechsler classification). Despite this, the two lowest scores in both the Verbal and Performance IQs were successful on the job. Both these individuals scored in Wechsler's mentally defective classification. The single highest Performance score, which was in the upper half of the normal range, was listed as a failure. On the Performance scale, we find the greatest likelyhood of job success if the subject scores above eighty IQ.

The next expectancy table is a comparison of the WAIS Full Scale IQ with the Revised Beta IQ.

Almost all the results fall above an IQ of ninety. In actuality, although the expectancy table cells do not reflect it, virtually all of the IQs in the ninety range are above ninety-five.

The highest single proportion of failures to successes on the WAIS comes at the lower side of the normal range. On the Beta results, a similar characteristic is noted, although there were fewer, numerically, below one hundred IQs on the Beta than the WAIS.

As noted on previous tables, the success/failure ratios are evenly distributed from the lowest ranking cells to the highest. We do note that in the clerical sample, the 100-109 IQ group on both the WAIS and Beta show the greatest success to failure ratio. Similarly, the greatest success to failure ratio within the Sewing class comes at the 90-99 IQ group on the Beta, and in the 80-89 IQ group on the WAIS. Previous comparitive studies at the Center suggest there may be just about this much equivalent difference (i.e.: seven to ten IQ points) between the WAIS Full Scale IQ, and the Beta IQ, with our population. The completely non-verbal Beta was higher by about this much in the unpublished study.

Purdue Pegboard scores were broken down into quartiles. The gross and fine (assembly) scores were compared with each other, and with placement success or failure in each of the three classes studied. It would appear that from the data shown, the higher a subject scores on the Pegboard, the better the odds for his vocational success. There were no placement failures in the group which placed in the top quartile on both subtests. The most failures appear below the median. The highest failure ratio occurs in the first quartile in the sewing group. The clerk-typist class had no scores in the first quartile on the fine dexterity test, however, the failure ratio is fifty percent in the second quartile. In the same

group, the gross dexterity scores in the first quartile show an even higher percentage of failure.

The reading and arithmetic tests from the California Surveys of Achievement were compared. It was found that successful placements were made in all three areas studied, including clerical workers, even though the scores fell in several instances below the sixth grade placement level. In both the nurse aide group and clerical groups the modal reading score was in the grade placement 6.0-6.9 cell. The sewing group mode was in the 4.0-5.9 cell. Failures were reasonably evenly distributed, except for a larger than normal group in the 8.0-8.9 cell of the reading test in the clerical group.

When the language and spelling tests were compared, we find that despite what could be called 'bottom heaviness' on the language tests within the nurse aide and sewing groups, the mode of the spelling tests is in the ninth grade or above range. Proportionally, the success/failure ratio across the range of the tables is more or less evenly distributed.

Our final expectancy tables examine the realtionship between the number of Occupational Aptitude Patterns (OAP's) formed, and whether or not the Specific Aptitude Test Battery was made. This is the equivalent of having formed the special pattern of aptitudes from which the OAP was derived.

In the sewing placements, we find that the numbers of

successes who did not make the SATB was virtually identical to those who did. Likewise, the number of failures are almost the same regardless of whether the SATB was made or not. Approximately forty per cent of the successful placements made no OAP's at all.

In the Nurse Aide group, the single placement failure falls into the group which failed to either form an OAP pattern, or to form the SATB for nurse aides. On the other hand, of the twenty one placement successes, only five made the SATB while sixteen did not. Six of the placement successes made no OAP's at all. One person made eleven or more.

In the Clerical worker group, we find an interesting paradox. More than half the placement failures made the SATB, while more than half the placement successes failed to make any of the SATB's descriptive of the work they were doing. Of those workers who made the SATB descriptive of their work, six of the seven made eleven or more OAP's. Of those successes who failed to make any clerical SATB, two thirds made five or less OAP's.

TABLE II

WAIS PERFORMANCE IQ		WAIS VERBAL IQ 60-69	70-79	80-89	90-99	100-109	110-120	TOTALS
110-120	1							0
	0							0
100-109	1							0
	0				1			1
90-99	1			5		1		6
	0			1				1
80-89	1		1	4	2			7
	0		1		1			2
70-79	1	1	3	2				6
	0		3					3
60-69	1	1	1					2
	0							0
TOTALS	1	2	5	11	3	1	0	
	0	0	4	1	1	0	0	

EXPECTANCY TABLE SHOWING THE RELATIONSHIP BETWEEN JOB PLACEMENT SUCCESS OR FAILURE AND THE WAIS VERBAL AND PERFORMANCE IQ'S: POWER SEWING MACHINE OPERATORS.

Note: Placement success at any given IQ level is represented by the numeral One (1) in the column at the left. Failure to remain on a job or inability to obtain a job is shown as a Zero (0) in the same column. For instance: six persons scored between 90-99 on the performance portion of the WAIS who also scored between 80-89 on the verbal portion of the same test. Of these six, five were successful placements, and one was a failure. Subsequent tables are read in the same manner.

TABLE III

WAIS VERBAL IQ

WAIS PERFORMANCE IQ		60-69	70-79	80-89	90-99	100-109	110-120	TOTALS
110-120	1						1	1
	0							0
100-109	1			1	1	1		3
	0							0
90-99	1		1	2	2			5
	0							0
80-89	1			7	3			10
	0			1				1
70-79	1			2				2
	0							0
60-69	1							0
	0							0
TOTALS	1	0	1	12	6	1	1	
	0	0	0	1	0	0	0	

EXPECTANCY TABLE SHOWING THE RELATIONSHIP BETWEEN JOB PLACEMENT SUCCESS OR FAILURE AND THE WAIS VERBAL AND PERFORMANCE IQ'S: NURSE'S AIDES.

TABLE IV

WAIS VERBAL IQ

WAIS PERFORMANCE IQ		60-69	70-79	80-89	90-99	100-109	110-120	TOTALS
110-120	1				1		1	2
	0				1		1	2
100-109	1				3	1		4
	0					1		1
90-99	1			2	3	2		7
	0				2	2		4
80-89	1			1	2			3
	0							0
70-79	1							0
	0							0
60-69	1							0
	0							0
TOTALS	1	0	0	3	9	3	1	
	0	0	0	0	3	3	0	

EXPECTANCY TABLE SHOWING THE RELATIONSHIP BETWEEN JOB PLACEMENT SUCCESS OR FAILURE AND THE WAIS VERBAL AND PERFORMANCE IQ'S: CLERICAL OFFICE WORKERS.

TABLE V

REVISED BETA IQ

WAIS FULL SCALE IQ		60-69	70-79	80- 89	90-99	100-109	110-120	TOTALS
110-120	1							0
	0							0
100-109	1							0
	0							0
90-99	1				2			2
	0				1	1		2
80-89	1			2	5	4	1	12
	0				1	1		2
70-79	1			5	1			6
	0		1	2				3
60-69	1		2					2
	0							0
TOTALS	1	0	2	7	8	5	1	
	0	0	1	2	2	1	0	

EXPECTANCY TABLE SHOWING THE RELATIONSHIP BETWEEN JOB PLACEMENT SUCCESS OR FAILURE AND THE WAIS FULL SCALE IQ AND THE REVISED BETA IQ: POWER SEWING MACHINE OPERATORS.

TABLE VI

REVISED BETA IQ

WAIS FULL SCALE IQ		60-69	70-79	80-89	90-99	100-109	110-120	TOTALS
110-120	1						1	1
	0							0
100-109	1			1				1
	0							0
90-99	1			1	2	4	1	8
	0							0
80-89	1		1	4	5	1		11
	0			1				1
70-79	1							0
	0							0
60-69	1							0
	0							0
TOTALS	1	0	1	6	7	5	2	
	0	0	0	1	0	0	0	

EXPECTANCY TABLE SHOWING THE RELATIONSHIP BETWEEN JOB PLACEMENT SUCCESS OR FAILURE AND THE WAIS FULL SCALE IQ AND THE REVISED BETA IQ: NURSE AIDES.

TABLE VII

REVISED BETA IQ

WAIS FULL SCALE IQ		60-69	70-79	80-89	90-99	100-109	110-120	TOTALS
110-120	1						1	1
	0						1	1
100-109	1					5		5
	0					1	1	2
90-99	1			1		5	1	7
	0			1	1	1	1	4
80-89	1			2				2
	0			1				1
70-79	1							0
	0							0
60-69	1							0
	0							0
TOTALS	1	0	0	3	0	11	2	
	0	0	0	2	1	2	3	

EXPECTANCY TABLE SHOWING THE RELATIONSHIP BETWEEN JOB PLACEMENT SUCCESS OR FAILURE AND THE WAIS FULL SCALE IQ AND THE REVISED BETA IQ; CLERICAL OFFICE WORKERS.

TABLE VIII

FINE DEXTERITY PERCENTILES		GROSS DEXTERITY PERCENTILES 1-25	26-50	51-75	76-99	TOTALS
76-99	1		3	3	2	8
	0					0
51-75	1		1	1	2	3
	0			1		2
26-50	1		4	1	1	6
	0	1	1	2		4
1-25	1	2	1			3
	0		1			1
TOTALS	1	2	8	5	5	
	0	1	3	3	0	

EXPECTANCY TABLE SHOWING THE RELATIONSHIP BETWEEN JOB PLACEMENT SUCCESS OR FAILURE AND THE GROSS AND FINE DEXTERITY SUBTESTS OF THE PURDUE PEGBOARD TEST: POWER SEWING MACHINE OPERATORS.

TABLE IX

FINE DEXTERITY PERCENTILES		GROSS DEXTERITY PERCENTILES 1-25	26-50	51-75	76-99	TOTALS
76-99	1		4		2	6
	0					0
51-75	1	1	5	3	1	10
	0		1			1
26-50	1		2		1	3
	0					0
1-25	1	2				2
	0					0
TOTALS	1	3	12	3	4	
	0	0	1	0	0	

EXPECTANCY TABLE SHOWING THE RELATIONSHIP BETWEEN JOB PLACEMENT SUCCESS OR FAILURE AND THE GROSS AND FINE DEXTERITY SUBTESTS OF THE PURDUE PEGBOARD TEST: NURSE AIDES.

TABLE X

FINE DEXTERITY PERCENTILES		GROSS DEXTERITY PERCENTILES 1-25	26-50	51-75	76-99	TOTALS
76-99	1			3	3	6
	0	1				1
51-75	1	3		1		4
	0		2	1	1	4
26-50	1	1	3	1		5
	0	2				2
1-25	1					0
	0					0
TOTALS	1	4	3	5	3	
	0	3	2	1	1	

EXPECTANCY TABLE SHOWING THE REALTIONSHIP BETWEEN JOB PLACEMENT SUCCESS OR FAILURE AND THE GROSS AND FINE DEXTERITY SUBTESTS OF THE PURDUE PEGBOARD TEST: CLERICAL OFFICE WORKERS.

TABLE XI

READING

ARITHMETIC GRADE LEVEL		GRADE LEVEL 4.0-5.9	6.0-6.9	7.0-7.9	8.0-8.9	9≤	TOTALS
9.0≤	1						0
	0						0
8.0-8.9	1		1		1		2
	0			1			1
7.0-7.9	1						0
	0						0
6.0-6.9	1	2	2	1	1	1	7
	0		1			1	2
4.0-5.9	1	8	3		1		12
	0	3		1			4
TOTALS	1	10	6	1	3	1	
	0	3	1	2	0	1	

EXPECTANCY TABLE SHOWING THE RELATIONSHIP BETWEEN JOB PLACEMENT SUCCESS OR FAILURE AND THE READING AND ARITHMETIC TESTS OF THE CALIFORNIA SURVEYS OF ACHIEVEMENT; JUNIOR HIGH LEVEL, FORM 1: POWER SEWING MACHINE OPERATORS.

TABLE XII

READING

GRADE LEVEL

ARITHMETIC GRADE LEVEL		4.0-5.9	6.0-6.9	7.0-7.9	8.0-8.9	9.0≤	TOTALS
9.0≤	1						0
	0						0
8.0-8.9	1						0
	0						0
7.0-7.9	1		2	1			3
	0						0
6.0-6.9	1	1	4	2	2	2	11
	0						0
4.0-5.9	1	3	2	1	1		7
	0		1				1
TOTALS	1	4	8	4	3	2	
	0	0	1	0	0	0	

EXPECTANCY TABLE SHOWING THE RELATIONSHIP BETWEEN JOB PLACEMENT SUCCESS OR FAILURE AND THE READING AND ARITHMETIC TESTS OF THE CALIFORNIA SURVEYS OF ACHIEVEMENT; JUNIOR HIGH LEVEL, FORM I: NURSE AIDES

TABLE XIII

READING

GRADE LEVEL

ARITHMETIC GRADE LEVEL		4.0-5.9	6.0-6.9	7.0-7.9	8.0-8.9	9.0≤	TOTALS
9.0≤	1			1		2	3
	0					1	1
8.0-8.9	1			1		2	3
	0				1		1
7.0-7.9	1			2	2	2	6
	0				2	1	3
6.0-6.9	1		1	2	1		4
	0			1	1		2
4.0-5.9	1						0
	0						0
TOTALS	1	0	1	6	3	5	
	0	0	0	1	4	1	

EXPECTANCY TABLE SHOWING THE RELATIONSHIP BETWEEN JOB PLACEMENT SUCCESS OR FAILURE AND THE READING AND ARITHMETIC TESTS OF THE CALIFORNIA SURVEYS OF ACHIEVEMENT, JUNIOR HIGH LEVEL, FORM I: CLERICAL OFFICE WORKERS

TABLE XIV

ENGLISH

GRADE LEVEL

SPELLING GRADE LEVEL		4.0-5.9	6.0-6.9	7.0-7.9	8.0-8.9	9.0≤	TOTALS
9.0≤	1			1	1	3	5
	0	1		2			3
8.0-8.9	1	2	1	1			4
	0						0
7.0-7.9	1	1		1		2	4
	0	1					1
6.0-6.9	1	1					1
	0	1			1		1
4.0-5.9	1	6		1			7
	0	1					1
TOTALS	1	10	1	4	1	5	
	0	4	0	2	1	0	

EXPECTANCY TABLE SHOWING THE RELATIONSHIP BETWEEN JOB PLACEMENT SUCCESS OR FAILURE AND THE ENGLISH AND SPELLING TESTS OF THE CALIFORNIA SURVEYS OF ACHIEVEMENT, JUNIOR HIGH LEVEL, FORM I: POWER SEWING MACHINE OPERATORS

TABLE XV

ENGLISH

GRADE LEVEL

SPELLING GRADE LEVEL		4.0-5.9	6.0-6.9	7.0-7.9	8.0-8.9	9.0≤	TOTALS
9.0≤	1		5	3	2	2	12
	0						0
8.0-8.9	1		1				1
	0						0
7.0-7.9	1	2	1		1		4
	0						0
6.0-6.9	1	1					1
	0	1					1
4.0-5.9	1	2			1		3
	0						0
TOTALS	1	6	7	3	4	2	
	0	1	0	0	0	0	

EXPECTANCY TABLE SHOWING THE RELATIONSHIP BETWEEN JOB PLACEMENT SUCCESS OR FAILURE AND THE ENGLISH AND SPELLING TESTS OF THE CALIFORNIA SURVEYS OF ACHIEVEMENT, JUNIOR HIGH LEVEL, FORM I: NURSE AIDES.

TABLE XVI

ENGLISH

GRADE LEVEL

SPELLING GRADE LEVEL		4.0-5.9	6.0-6.9	7.0-7.9	8.0-8.9	9.0	TOTALS
9.0_	1		1	1	2	5	9
	0			3		3	6
8.0-8.9	1		1			1	2
	0				1	1	2
7.0-7.9	1					1	1
	0						0
6.0-6.9	1		1	1			2
	0						0
4.0-5.9	1						0
	0						0
TOTALS	1	0	3	2	3	7	
	0	0	0	3	0	4	

EXPECTANCY TABLE SHOWING THE RELATIONSHIP BETWEEN JOB PLACEMENT SUCCESS OR FAILURE AND THE ENGLISH AND SPELLING TESTS OF THE CALIFORNIA SURVEYS OF ACHIEVEMENT, JUNIOR HIGH LEVEL, FORM I: CLERICAL OFFICE WORKERS.

TABLE XVII

NO. OF OAP'S FORMED

		NONE	1-5	6-10	11≤	TOTALS
SATB FORMED	1		3	4	4	11
	0		2	1		3
SATB NOT FORMED	1	8	1	1		10
	0	2	2			4
TOTALS	1	8	4	5	4	
	0	2	4	1	0	

EXPECTANCY TABLE SHOWING THE RELATIONSHIP BETWEEN JOB PLACEMENT SUCCESS OR FAILUE AND TWO FACTORS OF THE UNITED STATES EMPLOYMENT SERVICE'S GENERAL APTITUDE TEST BATTERY: THE NUMBER OF OCCUPATIONAL APTITUDE PATTERNS FORMED, ANDWHETHER OR NOT THE SPECFIC APTITUDE TEST BATTERY FOR THE SPECIFIC JOB DESCRIPTION WAS FORMED: POWER SEWING MACHINE OPERATORS.

TABLE XVIII

NO. OF OAP'S FORMED

		NONE	1-5	6-10	11	TOTALS
SATB FORMED	1			4	1	5
	0					0
SATB NOT FORMED	1	6	5	5		16
	0	1				1
TOTALS	1	6	5	9	1	
	0	1	10	0	0	

EXPECTANCY TABLE SHOWING THE RELATIONSHIP BETWEEN JOB PLACEMENT SUCCESS OR FAILURE AND TWO FACTORS OF THE UNITED STATES EMPLOYMENT SERVICE'S GENERAL APTITUDE TEST BATTERY: THE NUMBER OF OCCUPATIONAL APTITUDE PATTERNS FORMED, AND WHETHER OR NOT THE SPECIFIC APTITUDE TEST BATTERY FOR THE SPECIFIC JOB DESCRIPTION WAS FORMED: NURSE AIDES.

TABLE XIX

NO. OF OAP'S FORMED

		NONE	1-5	6-10	11≤	TOTALS
SATB FORMED	1		1		6	7
	0		1		3	4
SATB NOT FORMED	1	4	2		3	9
	0		1	1	1	3
TOTALS	1	4	3	0	8	
	0	0	1	1	4	

EXPECTANCY TABLE SHOWING THE RELATIONSHIP BETWEEN JOB PLACEMENT SUCCESS OR FAILURE AND TWO FACTORS OF THE UNITED STATES EMPLOYMENT SERVICE'S GENERAL APTITUDE TEST BATTERY; THE NUMBER OF OCCUPATIONAL APTITUDE PATTERNS FORMED, AND WHETHER OR NOT THE SPECIFIC APTITUDE TEST BATTERY FOR THE SPECIFIC JOB DESCRIPTION WAS FORMED: CLERICAL OFFICE WORKERS.

CHAPTER IV

SUMMARY AND CONCLUSIONS

In this chapter we shall present a brief summary of the study, and the raison d'etre for the study. Following this summary we will present our conclusions and evaluation of both the study and the content of the study.

I. SUMMARY

Like many other agencies involved in anti-poverty activities, the Jewish Employment and Vocational Service developed a training program for the disadvantaged clients who lacked the necessary skills to obtain a job. In order that these clients receive prevocational counseling and proper training referral, a testing program was implemented. All clients coming to the training center received a battery of aptitude, achievement, and intelligence tests. At no time in the program did J.E.V.S. attempt to correlate certain test scores with probable training or vocational success, but instead relied on the clinical judgement of the client's counselor. This study represents the first attempt to bring together data with which to examine this relationship.

Three major training areas were examined. These areas were: power sewing, nurse aide, and clerical office work. Six tests were tested for their ability to predict success: the WAIS; Revised Beta; Purdue Pegboard; California Surveys of Reading, Arithmetic, English, and Spelling; the GATB; and

the Wonderlic Personnel Test. Two separate criteria for success were established, against which these tests were checked for predictive ability: 1. success in training, and 2. the ability to remain employed after six months, following successful completion of training.

Success in training was determined by a seven point rating scale to be filled out by the instructor. Expectancy tables were prepared showing the relationship between each of the tests, by score groupings, and the instructor's rating.

The second of the success criteria, by job placement success, was established by follow-up research six months after placement on the job. Several quality controls were set up. The client had to be employed on the type of job for which he had been trained, he had to be working for the same employer, and of course, he had to have had all the tests. Double entry expectancy tables were prepared, showing the relationship between certain similar tests, or between subtests of the same test in several instances. This was done in order to establish differences or similarities, andto establish if there were in fact differences in the predictive ability of the several tests.

II. CONCLUSIONS

A considerable problem arises because of the very small sample gathered. For this reason, any conclusions drawn must

be limited in scope and definitiveness by the large error introduced when such a small sampling is used.

As may be expected with small samples, no clear patterns emerged on the expectancy tables. On the teacher rated group, most of the results were inconclusive, with one or two exceptions. A clear cutoff point was seen on the WAIS Verbal IQ at the dull-normal range (Wechsler classification system). This was not seen on the Performance IQ table, where there seemed to be no pattern at all. Reading achievement seemed to fall above the seventh grade level, although low reading achievement seemed to have little to do with teacher ratings. The most startling result appears on the GATB results. Basically, it would appear that the lower the number of OAP'S made, the better one's chances of receiving a good rating from the instructor.

Of the three groups, an interesting phenomena is found. In the Nurse Aide group, placement failures are uncommon. Only one person in this group appeared to be a placement failure. For this reason, the predictive value of the tests is diminished for this group.

The WAIS seems to be of little use except in the form of cutoff scores. Apparently clerical workers should score at the normal range or better, although the percentage of placement failures covers the range of scores. The Beta shows a similar result, in that the trainee should score above the mean of the

test, or one hundred IQ. The Purdue Pegboard shows the best predictive ability of all the tests studied. The higher the Pegboard score, the higher the job retention rate. We will not speculate on the meaning of this. The remaining tests, the California Surveys and the GATB show little conclusive results, and no clear pattern emerged.

From this study, we must arrive at two conclusions: (1) Further research in the area of using tests to predict probable vocational success of disadvantaged persons is needed; (2) On the basis of the present study, those persons currently using tests for such purposes should seriously question heavy reliance on tests for these clients.

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